

A Framework of Competences

**for Level 3 Training
in Paediatric Emergency Medicine**

July 2006
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FOREWORD

I am very pleased to present this final stage, Level 3, of our Framework of Competences in Paediatrics. This level 3 document builds on the two preceding frameworks we have published, for Basic Specialist Training and for Core Higher Specialist Training, now re-named as Levels 1 and 2. The emphasis is firmly on the achievement of competences and not on a time-based training programme. From August 2007 all trainees will enter specialty training within the framework outlined in the Modernising Medical Careers initiative. Achievement of these competences will determine a trainee's progress through the specialty training programme.

The development of this Level 3 framework, with our fifteen sub-specialty curricula, has represented a huge amount of work. I would like to thank all those chairs and members of our College Specialist Advisory Committees (CSACs) who have shown such commitment and support to this project. In particular, we would like to thank Dr Edward Wozniak and Dr Gabrielle Laing, Chairs of General Paediatrics and Community Child Health CSACs respectively, who have been involved in the development of the competences at all three levels.

The College Officers responsible for training have guided and supported this work unstintingly for the last eighteen months and I would like to thank Dr Mary McGraw, Dr Claire Smith and Dr Ian Doughty for their commitment and involvement in the project. In addition, we would like to thank Kim Brown for the development and co-ordination of this work.

These documents have been prepared for submission to PMETB in July 2006 and we hope to publish them, subject to their approval, by Christmas 2006.

Patricia Hamilton
President, Royal College of Paediatrics and Child Health
1 July 2006

Section 1 Introduction

Who is this book for?

It is for doctors at Level 3 in their training in Paediatric Emergency Medicine, their tutors and educational supervisors.

Paediatric Emergency Medicine is a subspecialty of Paediatrics or Emergency Medicine concerned with providing highly specialised acute health care to children of all ages. This document is intended for doctors who have completed Higher Specialist Training in Paediatrics or Accident and Emergency Medicine and wish to sub-specialise in Paediatric Emergency Medicine. This framework defines the competences that trainees should achieve by the completion of subspecialty training thus enabling them to provide high quality care to sick and injured children in a modern NHS.

What is a Paediatric Emergency Medicine Physician (PEMP)?

- The PEMP is able to look after patients with a wide range of pathologies from the life threatening to the self-limiting within all paediatric age groups in the Emergency Department setting.
- Essential to the work of the PEMP is the principle that all decisions should be made in the best interests of the child or young person in their care.
- The PEMP is able to safely and effectively identify those children needing admission and those that can be safely discharged.
- The PEMP is able to conduct a primary assessment and take appropriate steps to stabilise and treat critically ill and injured children.
- The PEMP is able to work in a difficult and challenging environment of the Emergency Department and is able to re-prioritise and respond to new and urgent situations.
- The PEMP is an expert at directing and co-ordinating medical and surgical resuscitations involving children.
- The PEMP is skilled at practical procedures especially those needed for resuscitation.
- The PEMP is able to interact with, co-ordinate, educate and supervise all members of the Emergency Department team.
- The PEMP is able to understand the unique interaction of the Emergency Department with every component of the hospital and its significant role in interacting with the external community
- The PEMP is able to act a co-ordinator in the Emergency Department in the setting of Major Incident.

Why do I need it?

The book gives you and your tutors guidance about the areas you need to cover during your training. It gives a clear picture of what you have to have achieved by the end of this stage of training, before you become a consultant. You need this book as it forms the basis of your assessment at the end of Level 3 Training.

How do I use the book?

You can sit down with the book on your own and use it to help you identify areas of practice that you need to work on and those areas in which you feel fairly confident. You can talk to your tutor about the balance of your experiences and look for ways to ensure that you cover all the areas you need to.

Progression

This is the final stage in your training as a paediatrician. The competences you gained during Level 1 (Basic Specialist Training) and Level 2, Core Higher Specialist Training have formed the basis for your progression into Level 3 training and on to a Consultant post. Table 1 (page 10) illustrates this progression through your training.

A note about the format of this document

This framework sets out the competences that you need to achieve by the end of Level 3 Training. These build on and develop statements of competence set out for Levels 2 and 3. You are expected to work from all three documents throughout this final stage of your training to ensure that you maintain and continue to develop areas of competence already acquired as well as developing new ones.

Sections 2 and 3 present new statements of competence for Level 3 only, in order to keep the focus clear. Trainees will need to refer back to previous documents for Level 1 and 2 competences in General and General Clinical competences

A note about assessment

The statements in this book have been expressed as learning objectives. These are the focus of your training.

When it comes to your assessment, at the end of this phase of your training, we will want to know how *well* you have achieved these objectives and to be confident that you are fit to practise as a Paediatric Consultant. This is what we mean when we talk about your *competence*. So while here you may have, for example, a number of detailed objectives relating to consultation skills or communicating with children, in your assessment we will want to see how you bring all these together and how competent you are overall in your communication skills. This document is not intended as an assessment document but to support training. The assessment of your competence will be by work-based assessments already in use and currently being developed.

Working group:

Kim Brown	Training and Assessment Adviser
Ian Doughty	Officer for Level 3 Specialist Training
Gabrielle Laing, Chair	Community Child Health Specialist Advisory Committee
Mary McGraw	-President for Training and Assessment
Claire Smith	Donald Court Fellow
Edward Wozniak	Former Chair, General Paediatrics Specialist Advisory Committee

Progression in the Professional Development of a Paediatrician

During Level1 Training	During Level 2 and 3 Training	Continuing development as a consultant
Acquires fundamental knowledge base	Applies knowledge base to provide appropriate clinical care	Evaluates knowledge and modifies clinical care pathways to enhance patient care.
Acquires clinical examination and assessment skills and applies these in clinical practice	Analyses clinical findings to derive appropriate differential diagnosis and management plans.	Evaluates assessment findings; refines and modifies management plans.
Acquires all basic technical skills and basic life support	Proficient at all basic technical procedures, some complex procedures and provides advanced life support.	May relinquish some skills in these areas dependent on area of clinical practice. May acquire specialty specific skills.
Performs allocated tasks and begins to plan tasks	Plans and prioritises tasks appropriately.	Increasing expertise with evaluation of priorities and appropriate delegation across a wide range of professionals.
Performs allotted teaching tasks	Plans and delivers teaching to trainees and other professionals. Develops peer mentoring skills.	Plans and modifies curricula. Performs assessment and appraisal. Able to provide mentorship.
Aware of management issues	Develops management skills and able to take responsibility for a defined project. Contributes to Committees.	Can negotiate and deal with conflict. Can contribute to and lead committees. Evaluates and modifies management structures.
Performs allocated audit projects and understands the audit cycle	Designs audit project and understands risk management. Able to write appropriate clinical guidelines. Understands the Clinical Governance implications	Facilitates audit, and evaluates results. Evaluates guidelines and ensures implementation of appropriate changes
Understands the principles of critical appraisal and research methodology	Able to appraise the literature critically and apply to clinical practice	Able to evaluate critical appraisal performed by others. Able to lead research projects and support others in research.
Works in multi-professional teams	Able to take the lead and accept leadership from other members of the multi-disciplinary team	Evaluates and modifies multi-professional team-working

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preparation for a clinic, or a presentation to a group of trainees and supervisors. Trainees may engage with a distance-learning programme in order to develop greater expertise in an area that interests them or that they need to strengthen. Supervisors will need to ensure opportunities for trainees who have undertaken independent study of this kind to share their learning with others. It is through teaching about something you have read or learned or understood differently that learning is consolidated and questioned.

Feedback is essential at all stages of the teaching and learning process. Even in the course of a lecture or on a ward round trainees can communicate important messages about their learning needs through facial expressions and body language as well as in their answers to questions. Tutors need to be ready to pick up on these, to seek out actively trainees' responses to their teaching so that they can make adjustments accordingly and ensure that effective learning takes place.

As well as independent study, trainees will find themselves in a number of different communities of practice. In many cases, their learning will result from shared discussion around the diagnosis of a condition, for example, or the identification of an injury. Experienced colleagues from a range of disciplines may join a specialist team, each sharing their expertise, in order to come to a safe diagnosis or decision about how to proceed, for example in the case of suspected abuse. Trainees need to be encouraged to join these discussions so that they develop confidence in their communication skills with colleagues and in their ability to contribute to clinical decision-making.

Supervisors need to be aware of the importance of asking questions in these situations and of the most effective way to do this, so that trainees are fully engaged and learning as they listen. Closed and open questions have their place, and explicit educational strategies such as 'scaffolding' are essential. The teacher takes the learners, step by step, from their initial level of understanding of a condition or a process, for example, to a deeper or more extensive understanding, through a formal cycle of informing, questioning, informing, testing out and consolidating new information. Ward rounds and clinics offer good opportunities for this kind of interaction, with individual trainees and groups. The exchange may be brief or sustained and it is the close focus on understanding which gives this teaching technique its power. Trainees are also encouraged to write a reflective log and it is important to make clear that this needs to go beyond a narrative of events to an analysis of the process of learning they are experiencing. This, in turn, will equip them well to become teachers themselves of less experienced colleagues.

The college is committed to an explicit educational approach. Identifying contexts for learning is the first step. But it is important to go beyond this to a consideration of the way in which different contexts influence the teaching and learning that take place or that are required. It is helpful to be able to identify apprenticeship models, or experiential learning but these alone do not tell us much

about the teaching and learning process. The curriculum sets out *what* is to be learned and we know where these things will be learned. But it is also essential to understand *how* teachers and trainees will learn.

With the completion of the curriculum, the college is now working on resources to support the teaching and learning of its contents and on guidance for trainees and supervisors on the pedagogical process of training in Paediatrics.

For an overview of teaching and learning in postgraduate medicine, see *Liberating Learning* (COPMED, 2002).

Section 2 General Competences

Knowledge and Understanding

Substantial re-wording or new statements of competence for Level 3 Training

- understand the impact of physical illness on mental functioning, for both children, young people and their parents and the effect of each upon the behaviour and functioning of the other
- understand the impact of relations and mental health upon a child's or young person's current and past emotions and behaviour
- understand the impact of culture and ethnicity in presentations of physical and psychological conditions
- know, understand and be able to compare and contrast medical and social models of disability
- understand the relationship between local health, educational and social service provision
- know about the agencies, both statutory and voluntary, that can provide general and condition-specific support to children, adolescents and their families in coping with their health problems
- know the objectives of paediatric follow-up

- understand and take account in their practice of risk issues to themselves and others, including those related to personal interactions, and bio-hazards
- have a working knowledge of risk assessment and its application to personal, professional, clinical and organizational practice
- understand and take account in their practice of measures to reduce clinical risk
- know how relative and absolute risks are derived and the meaning of the terms predictive value, sensitivity and specificity in relation to diagnostic tests
- know the legal and ethical guidelines to support their work, management and challenges and where to find more information when required
- be aware of the multidisciplinary investigation of sudden unexpected death in infancy
- understand the management of bereavement and be aware of national guidance documents on this
- understand the purpose of post-mortem examinations and know about procedures
- understand the process of bereavement in children and families and recognise abnormal grieving patterns

Competences specific to the specialty

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- know and understand the scientific base relevant to clinical practice in Paediatric Emergency Medicine
- have the knowledge of the clinical features, diagnostic criteria, epidemiology, natural history, patho-physiology, complications and consequences of acute illness and injury in children
- understand the other factors that effect prioritisation of patients other than clinical priority
- know that children are vulnerable and therefore illness or injury may be inflicted
- know and respect the legal framework and ethical issues relating to children in the Emergency Department setting including consent and confidentiality
- understand the acute toxicity of cancer treatment (individual drugs and radiotherapy)
- understand the principles of biopsy and definitive surgery and optimal handling of tissue for diagnosis and biological studies
- understand the importance of tumour and DNA banking for future research
- have a knowledge and understanding of the late effects of therapy, including endocrine consequences, major organ toxicities and their causative agents

(see *Good Medical Practice* (GMC 2001) - Good Clinical Care: 2, 3; Delegation and Referral: 45, 46.)

Skills

Substantial re-wording or new statements of competence for Level 3 Training

- recognise the breadth of different presentations of common disorders
- recognise features of undifferentiated illness which suggest serious or unusual pathology and initiate the appropriate clinical response with appropriate urgency
- recognise the diseases and host characteristics which make certain presentations life-threatening and manage these situations with vigilance and appropriate urgency
- be able to recognise when both physical and psychological problems are present and when more than one condition or disorder may be present
- be able to assess and manage co-morbidities associated with the range of paediatric presentations
- take a history from a child, young person and parent of the presenting difficulties to acquire information in sufficient breadth and depth in a range of possible symptom areas to allow accurate formulation of the problem

- be able to undertake an assessment of the mental state of children and young people, taking into account their age and stage of development and know whether they have the skills to help them and when to seek more expert paediatric, mental health or psychiatric assessment
- have developed observation skills to support their interpretation of children's or young people's developmental levels and possible physical signs when they are unable to co-operate with formal assessments
- be able to supplement clinical assessment with standardised instruments or questionnaires
- know when to gather information from other professionals eg those working in education, social work or from others who see the child in a variety of settings
- be able to seek the views of children and young people, whatever their illness, regarding individual care and service planning, using expert resources appropriately

- be able to make a decision on the 'most likely' diagnosis and discuss this effectively with children and young people and their parents or carers, and with other colleagues, in the context of a plan of investigation and management
- be able to formulate a management plan for complex cases
- be able to review and modify a management plan as appropriate and know when to request help from senior colleagues or other services
- be able to take responsibility for the longer-term management of common acute and chronic cases leading or working with the multi-disciplinary and multi-agency teams, sub-specialists or networks as appropriate
- have developed expertise in practical procedures specifically related to the clinical care of small babies and children, and young people
- be able to develop and work within care pathways
- be able to manage and know how to obtain support for the consequences of chronic illness for a child, young person and their family

- be able to work effectively in multi-disciplinary teams and with colleagues from a wide range of professional groups
- be able to interact effectively with professionals in other disciplines and agencies and from the voluntary sector
- be aware of their role in the team and of their impact in the team

- have developed skills in recording consultations accurately and sensitively whilst maintaining a good rapport with the young person and family
- have developed a wide range of effective age-appropriate communication skills specific to their work with babies, children, young people and their families

- have developed credibility in their relationships with children, young people and their families, and with colleagues through their knowledge and skills and experience in clinical practice and in their ability to work independently
- have developed strategies to manage a child's or young person's anxiety and personal anxieties
- have developed basic behavioural management skills with parents, children and young people and with other professional colleagues
- be able to recognise, acknowledge and manage different levels of parental anxiety
- be able to assess patterns of relationships and functioning within a family and how these might impact on a child's or young person's illness, seeking professional advice where appropriate
- have developed effective skills in the management of emotionally complex family situations
- be able to recognise indicators of stress or mental health problems in family members and communicate appropriately with relevant professionals
- be able to remain calm in stressful or high-pressure situations and take a timely, rational approach to the problem
- be able to approach new situations which require good clinical judgement with an analytic and informed approach
- show confidence and independence in decision-making in the care of patients

- be able to apply effectively to their practice the knowledge and understanding acquired during training
- have developed a reflective approach to their practice, with an awareness of their level of expertise and limitations and their development needs
- show an ability to learn from their previous good practice, and from clinical errors

- be able to practise evidence-based medicine and understand and analyse critically its limits
- be able to understand the limitations of guidelines, how to use guidelines effectively and when it is appropriate to work outside guidelines
- have skills in managing perceptions of presenting complaints and illness for instance in response to perceived stigma
- have developed skills in maintaining appropriate confidentiality in relation to the social situation of the child
- be able to discuss an assessment of the psychosocial health of a child or young person with the multi-disciplinary team while respecting patient confidentiality

Competences specific to the specialty

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- be able to show effective time management and prioritisation within the Emergency Department

(See *Good Medical Practice* (GMC, 2001) - Good Clinical Care: 2,3; Maintaining Trust: 19; Working with Colleagues 34, 36; Probity: 50.)

Values and Attitudes

Substantial re-wording or new statements of competence for Level 3 Training

- be committed to a policy of advocacy for a healthy lifestyle in children and young people and for the protection of their rights
- understand national and contribute to local initiatives aimed at reducing inequalities in child health and well-being
- practise with compassion and respect for children, young people and their families and act as a role model for others
- adopt an open-minded approach to equality and diversity in their practice
- be aware of the effects of social, cultural and religious context and conflict upon families
- understand the importance of cultural diversity and the difficulties where religious and cultural beliefs that parents might hold about the treatment of their children are in conflict with good medical practice
- have developed strategies to manage relationships where health-care beliefs might cause conflict
- be able to advise patients appropriately on debates and controversies in health care
- be sensitive to the effects of stigma on children and families in relation to medical conditions

- be able to work effectively with children, young people and parents or carers, to agree and help them follow management plans
- be able to work effectively with young people who may have or may develop health care beliefs which are in conflict with those of parents or professionals

- be able to accept complex and difficult challenges
- show an understanding of the importance of ensuring a healthy balance between professional and domestic priorities
- have the willingness to acknowledge and reflect on the way in which they may, influenced by their earlier life experiences, have an impact on perceptions of and interactions with

young people, their families and professionals

(See *Good Medical Practice* (GMC, 2001) - Good Medical Practice: 1; Good Clinical Care: 5; Maintaining Trust: 19; Working with Colleagues: 36.)

Teaching and Research

Substantial re-wording or new statements of competence for Level 3 Training

- have developed a range of effective teaching and learning skills in a range of clinical contexts
- be able to identify learning needs in a wide range of professionals and build on this in their teaching
- be able to elicit and act upon feedback on content and presentation of teaching
- be able to participate in teaching and research on topics within their specialty and in related areas
- conduct research with honesty and integrity, seeking ethical approval where appropriate and safeguarding the interests of patients

- demonstrate an understanding of ‘good clinical practice’ for all aspects of the conduct of clinical trials
- demonstrate an understanding of the role of ethics committees for clinical studies and the process of ethics applications
- understand the techniques used in epidemiological studies

- demonstrate an understanding of how to perform and interpret systematic reviews, how they differ from narrative reviews and understand the principles of meta-analysis
- understand the difference between population-based assessments and unit-based studies and be able to evaluate outcomes for epidemiological work

- be able to develop clinical guidelines, understand how they are produced nationally and how these should be used to guide their own practice
- be able to evaluate research effectively in paediatrics and child health
- take responsibility for the training, supervision and assessment of undergraduates and trainees and other professionals such as nurses, teachers and social workers in and outside the specialty
- have developed skills in the presentation of information relevant to their clinical practice for a range of audiences, including spoken presentations at meetings, written information

for children and families and training materials for different groups of colleagues

- be able to lead departmental teaching programmes, including journal clubs
- be willing to accept mentoring as a positive contribution to their own professional development
- be willing to learn from others, to discuss cases openly and to seek advice as appropriate and as necessary

(See *Good Medical Practice* (GMC, 2001) - Teaching and Training, appraising and assessing: 13, 14, 15, 16; Probity: 51.)

Leadership and Management

Substantial re-wording or new statements of competence for Level 3 Training

- be able to provide specialist support to hospital- and community-based paediatric services including primary care
- be able to take on a leadership role in a multi-disciplinary team when appropriate, for example by representing the health needs of a child, young person and their family at a discharge meeting, and know when it may be inappropriate to do so
- be able to work effectively in multi-agency teams, for example, with social workers and teachers, and have developed an awareness of their own role within the team and of the skills and expertise of others
- be confident to make decisions within a team and be aware of their impact on other team members

- be able to advise the team providing advanced life support and to liaise effectively with anaesthetic and PICU staff
- demonstrate effective leadership skills in clinical situations, for example through their ability to organise, prioritise and delegate, and be able to help others to develop these skills

- have skills and strategies to manage conflict effectively
- have understanding and skills to be able to participate effectively in clinical and management meetings
- have developed effective administrative skills including ways to make best use of secretarial resources
- be able to handle enquiries from the press and other media effectively
- recognise their own working preferences and accept different approaches of colleagues

- know how to respond appropriately to health service targets and be able to participate in the development of services
- be able to work with stake-holders so that a client- or patient-centred service is created and sustained
- have gained an understanding of national and local regulatory bodies, particularly those involved in standards of professional behaviour, clinical practice and education, training and assessment
- understand the value and limitations of evidence-based medicine
- use principles of evaluation, audit, research and development in standard-setting and in improving quality
- demonstrate responsibility for ensuring reliability and accessibility of both themselves and others in their team
- have effective skills in ensuring the responsible approach of others in their team to health, stree and well-being

Competences specific to the specialty

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- be able to take on a leadership role in the multidisciplinary team including in the setting of resuscitation and major incident
- understand the legal requirements of the Children Act, the Human Rights Act and Information Act as they pertain to children and young people in the Emergency Department
- understand the National Service Framework, the role of the Royal College of Paediatrics and Child Health and Faculty of Accident and Emergency Medicine and the Postgraduate Medical Education Training Board
- be able to demonstrate the skills of efficient assessment, management and decision making in an environment of large patient volumes and rapidly changing priorities
- understand the principles of audit, risk management, incident reporting and complaint management as pertinent to the Emergency department

(See *Good Medical Practice* (GMC, 2001) - Working with Colleagues: 34, 35, 36, 39, 42.)

Personal Commitment to Professional Standards

Substantial re-wording or new statements of competence for Level 3 Training

- understand the duty of all professionals working with children to report concerns about child protection issues to Social Services

- be able to contribute to the implementation of national and local health policy initiatives
- know and follow key legal and ethical guidelines relating to confidentiality, consent to treatment, the right to refuse treatment, continuing changes in the law and its interpretation and be aware of variability in Scotland, Wales and Northern Ireland
- be able to generate local and evaluate national clinical guidelines and protocols in paediatric practice and public health and recognise the individual patient's needs when using them
- participate and take responsibility for clinical governance activities, and encourage and support colleagues in their participation
- be able to carry out audit in a range of settings in partnership with all stakeholders in order to identify best practice
- know about and participate in clinical and research special interest groups relevant to their specialty

- know when in the interest of the child it may be necessary to break confidentiality

- know how to find, review and maintain relevant knowledge in their specialty in order to maintain their fitness to practise
- ensure that they are up-to-date in their practice and promote evidence-based medicine where possible
- be able to evaluate their own performance critically
- be open about sharing and reviewing their practice with others
- be aware of local processes for dealing with and learning from clinical errors and to be able to work within them

(See *Good Medical Practice* (GMC, 2001) - 1; Maintaining Good Medical Practice: 10, 12; Relationships with Patients: 17; Working with Colleagues: 35; Dealing with Problems in Professional Practice: 26, 27, 29, 30. Probity: 58.)

See also for all of these sections: *Good Medical Practice in Paediatrics and Child Health*,² London: Royal College of Paediatrics and Child Health (2002).

Communication Skills in Paediatrics

Substantial re-wording or new statements of competence for Level 3 Training

- understand the importance of directing communications to the baby, child or young person

² *Good Medical Practice in Paediatrics and Child Health*, London: Royal College of Paediatrics and Child Health (2002). Online at www.rcpch.ac.uk/publications/recent_publications.html

as well as to parents and carers

- have developed skills to establish a child's or young person's and family's understanding of a situation from what has been said and written and to build on this effectively in discussion about the condition and its management
- understand the importance of seeking the views of all children and young people to inform decisions about their individual care and to encourage their participation in their care
- encourage children and young people to participate in their individual care and in the development of services, using expert resources appropriately

- have effective active listening skills in consultations with children and young people and understand the need to respect their views in accordance with their age and maturity and to respond appropriately where, for example, a child or young person is felt to be vulnerable
- have developed effective skills in working with children, young people and families to achieve concordance in planning management and treatment, enabling children and young people to maximise control over their illness and its management
- be able to respond appropriately, and know where to find assistance, in cases where a child, young person or family may not all speak English or where there is a sensory impairment that may affect understanding
- be able to respond to babies, disabled children or young people who may not be able to express themselves verbally, including those who might be in pain or distress
- be able to recognise, interpret correctly and respond to verbal and non-verbal cues from children, young people and parents
- have developed observation skills to support their interpretation of children's or young people's developmental levels and possible physical signs when they are unable to co-operate with formal assessments
- demonstrate appropriate responses and empathy for children, young people and their families experiencing difficulty and distress
- have developed a range of language strategies, such as the use of metaphor or images which relate to everyday life, to explain clearly to a child or young people and their family, their symptoms, condition or treatment, their feelings or behaviour

- be able to counsel parents about serious conditions and abnormalities within their area of expertise
- have effective strategies for careful and appropriate use of language in difficult and challenging circumstances, for example, at the birth of a baby with disabilities or where there is a conflict with colleagues
- be able to discuss the indications, benefits and adverse events of a procedure to patients,

relatives and carers in a manner that will allow informed consent

- have developed a range of approaches to communicating the breadth of diagnostic possibilities and other clinical information to children, young people and their families so that consent is always informed and the plan and progress of treatment understood
- be able to advise children, young people and their families about the importance of concordance and about medication interactions and side-effects
- be able to convey and share effectively difficult or bad news, including end-of-life issues, with children, young people, parents or carers and help them to understand any choices they have or decisions to be made about ongoing management
- be able to prepare and discuss with parents, carers and other professionals “Do not attempt resuscitation” policies as appropriate, taking due account of the Human Rights Act (1998), ensuring that the best interests of the child are held as paramount at all times
- be able to seek consent for post-mortem examinations and communicate effectively with the Coroner

- be able to explain the role of other professionals and agencies to children, young people and their families
- have the confidence to be firm and diplomatic in difficult situations, for example, when dealing with angry parents
- understand the limits of their competence, particularly in stressful situations and be willing to seek help in managing sensitive and complex situations
- be able to demonstrate to trainees how to communicate a diagnosis and prognosis effectively to children, young people and their families
- be able to demonstrate and explain to trainees strategies used to conduct effective consultations with babies, young children, adolescents and their families

- have effective skills in written communications for a range of audiences, for patients and their families, colleagues and other professional organizations
- ensure that spoken and written communications with patients and families are presented in clear, straightforward English, avoiding jargon whenever possible
- ensure that written information in the form of booklets, leaflets, information sheets and websites support verbal communications wherever possible
- ensure that written communications summarise accurately discussions with children, young people and parents or carers, and, to avoid confusion and anxiety, do not include information that was not part of the original discussion

- be able to liaise with parent support and self-help groups when necessary

- be able to prepare a court report as a professional witness and develop the skills to present such material in court
- know how to write reports about alleged abuse of children and young people for social services or the courts
- be able to write reports that explain the condition of a child or young person to non-health personnel working in the courts, social services or education
- be able to use electronic communication media, taking into consideration the principles of confidentiality outlined in the Data Protection Act
- have developed effective professional networks to support clinical practice and other activities, including research, education and management

Competences specific to the specialty

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- be able to show concern for age and development, gender, disability, psycho-social, cultural and economic implications of a patient's unique situation
- be able to tackle sensitivity of the issue of organ donation and end- of-life decisions in children
- be aware of the legal framework of the NHS on the care of the deceased and requirements for death certification and compulsory inquests

Section 3 General Clinical Competences

Development

Substantial re-wording or new statements of competence for Level 3 Training

- know the range of patterns of normal development from birth to adulthood
- know and understand the range of children's or young people's psychological and social development, including the normal range and what is outside it
- be able to identify when patterns of development are abnormal and where there may be a risk of abnormality which may only become apparent with time
- know the causes of disability, how disability might affect clinical examination and assessment and be able to contribute to a multi-disciplinary approach to management
- understand the severity of the presentation, taking into account normal development in appropriate domains
- know how to institute further assessment and investigation
- know about different modes of screening and health promotion strategies

- understand the ways in which children's or young person's mental health difficulties may present in infancy, childhood and adolescence
- understand the impact of biological factors, including genetic and cognitive factors, on the mental health of children and young people
- understand the impact of other environmental factors (including violence, trauma, neglect, abuse and disruption, wherever this has occurred) on a child's development, mental health and functioning
- be able to assess the effects of recurrent or chronic illness and its treatment on growth, psycho-social, emotional, physical and sexual development and have strategies to minimize adverse effects

Emotional development

Substantial re-wording or new statements of competence for Level 3 Training

- understand and recognise somatisation disorders and know how to provide initial management and how to access appropriate support
- recognise pointers to fabricated and induced illnesses and know how to provide initial management and how to access available support

- understand the emotional impact of illness and hospitalisation on children, young people and their families and take action to minimize this impact
- understand how a family's, child's or young person's attitude to the problem and services may have a significant impact on the presentation and its management
- recognise the need for specialised input in cases of serious emotional distress or mental illness and ensure their needs are met within local health provision
- understand the emotional dimensions of eating disorders and recognise and initiate treatment

- be able to assess parenting skills and recognise and respond to indications of unsatisfactory or unsafe parenting
- know how to access help in cases where children or young people of different ages might be deprived of opportunities to play and to learn
- know how to manage common behavioural problems

Social development

Substantial re-wording or new statements of competence for Level 3 Training

- be able to recognise and understand the impact of autistic spectrum disorders and other organic disorders on social development

Educational development

Substantial re-wording or new statements of competence for Level 3 Training

- demonstrate, in all aspects of their practice, an understanding, of the vulnerability of a child or young person with learning difficulties

Growth and Nutrition

Substantial re-wording or new statements of competence for Level 3 Training

- know the reasons for faltering growth, including emotional factors and how to investigate appropriately
- understand and assess normal and abnormal pubertal development and its relationship to growth
- understand the environmental factors contributing to obesity and how these might be altered

- be able to recognise feeding problems and work with parents directly to offer simple advice and to treat co-morbid conditions
- know about the principles and methods and indications for nutritional support and common problems that may arise from invasive methods or refeeding
- be able to identify nutritional deficiencies and growth failure which may occur in children and young people who undergo unsupervised dietary modification

Adolescence

Substantial re-wording or new statements of competence for Level 3 Training

- understand what the specific needs of young people are, in terms of their emotional, mental and physical health, and how these are different from those of children
- know the epidemiology of the main causes of morbidity and mortality in young people
- ensure that young people have access to ‘in-patient’, ‘outpatient’ and other medical services that best meet their needs
- understand why young people harm themselves and respond appropriately to actual or threatened episodes of self-harm in adolescents
- understand the consequences of self-harm and be able to work as part of a clinical network in the management of the young person who self-harms
- be able to discuss sexual health issues including basic contraceptive advice and know how to help the young person access appropriate sexual health or genetic advice
- know about national policies concerning the health care of young people, including those which help to reduce teenage pregnancy
- understand the processes of adolescence including experimental behaviours, learning by experience, achieving independence from the family, and the consequences of these on health and illness in young people
- be able to discuss comfortably with young people important health behaviours such as the use of tobacco, alcohol or recreational drugs, and intimacy and sexual activities together with the promotion of appropriate strategies for these in relation to specific conditions such as asthma, diabetes, cystic fibrosis, physical disability
- understand the particular needs of adolescents with regard to their independence and autonomy, education and work, body image and sexual identity, concordance with medication and risk-taking and understand how these factors may be affected in young people with chronic conditions

- be able to support young people in self-management of both acute and chronic disease where they want to, and have an understanding as to how to best help when the young person cannot or does not want to manage this
- be able to discuss the implications of chronic illness or disability for career options
- where appropriate and at a negotiated time, be able to raise and agree management of end-of-life issues with young people and their families and record conclusions in medical notes

- understand issues around transition from paediatric to adult care in adolescents with chronic conditions and disabilities, and be able contribute effectively to transitional care services
- understand and value the roles of members of the multidisciplinary team in the delivery of a transitional care programme

Section 4 Specialty-specific Competences in Paediatric Emergency Medicine

Acute life support / Resuscitation

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- be able to recognize the patient at risk for an obstructed airway
- be able to recognize the patient in respiratory failure or arrest
- be able to formulate a differential diagnosis by age of a patient with acute- life threatening respiratory difficulty and prioritise management
- be able to provide immediate management of a patient with acute life- threatening respiratory difficulty
- understand the life-threatening nature of these problems and know when to call for help of more experienced colleagues
- be able to lead a resuscitation team in line with APLS/EPLS/NLS guidelines
- be able to recognize the child in shock and formulate a differential diagnosis
- understand the indications, pharmacology, contraindications, dose calculation and routes of administration of drugs used in resuscitation and in the stabilization of children in cardiac arrest or failure
- be able to obtain venous and arterial access including IO & central lines
- be able to ensure appropriate non-invasive and invasive monitoring including arterial and end tidal-Co₂
- obtain, interpret and react appropriately to blood gas results and blood pressure measurements across a range of emergency presentations in all paediatric age groups
- understand the prognostic factors for outcome of cardiac resuscitation
- understand the indications and procedures for transport to a definitive facility following stabilization
- have developed a sensitivity and understanding regarding the management of chronic end-stage conditions
- understand the appropriate management of Sudden Death in Infancy and the local management guidelines for supporting the family

The patient presents with:	Knowledge and understanding	Skills
Respiratory failure or arrest	<p>understand the appropriate use of pharmacological agents in induction and post- intubation and be aware of complications and side- effects</p> <p>know the indications and contraindications for a surgical airway</p> <p>understand the pharmacological and mechanical interventions post-stabilization of the airway and prior to arranging transport to the definitive unit</p> <p>understand the prognostic features of the outcome of respiratory arrest</p>	<p>be able to assemble a team prior to the patient's arrival</p> <p>be able to differentiate upper and lower airway obstruction</p> <p>be able to follow age-appropriate algorithms for obstructed airway</p> <p>be able to manage the difficult airway including being able to perform basic airway opening manoeuvres, effective bag valve mask ventilation, laryngeal mask insertion and intubation</p> <p>be able to manage a failed intubation</p> <p>be able to initiate and maintain mechanical ventilation with an understanding of possible complications</p> <p>be able to discuss end of life decisions in a sympathetic and caring manner with patients and their families</p> <p>be able to organise a safe and well documented transfer of the patient to definitive care</p>
Cardiac failure or arrest	<p>understand the causes of heart failure</p> <p>understand the outcomes of cardiac arrest in children</p>	<p>be able to distinguish the type of shock and to differentiate compensated from uncompensated shock</p> <p>be able to perform effective cardiac compressions</p> <p>recognise when to ask for urgent surgical opinion</p> <p>be able to recognise rhythm disturbances and initiate appropriate treatment</p> <p>be able to make appropriate use of fluids including blood products</p> <p>be able to defibrillate, perform cardioversion and provide external pacing</p>

The patient presents with:	Knowledge and understanding	Skills
Cardiac failure or arrest		be able to use vasoactive drugs appropriately including awareness of complications be able to take decisions in circumstances which present ethical issues and know when to cease resuscitation be able to discuss organ donation in a sensitive manner

Cardiology

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage babies and children presenting to the Emergency Department with cardiological disorders
- understand the life-threatening nature of some of these conditions and when to ask for the help of a cardiologist or others with more specialised expertise
- understand and recognize the possible cardiac complications of other system disorders
- be able to select and interpret appropriate cardiological investigations including ECGs at all ages and know the indications for echocardiography
- understand the pharmacology, indications, side-effects and complications of cardiac drugs used commonly in the emergency department
- understand when referral for specialist paediatric cardiology assessment for further management is appropriate

The patient presents with:	Knowledge and understanding	Skills
Heart failure	<p>understand the causes and precipitating factors of heart failure</p> <p>understand the appropriate drugs to use in treatment and their indications, contraindications and side-effects</p>	<p>be able to initiate appropriate investigations and treatment</p> <p>be able to identify patients who need to be referred and when to call for help urgently</p> <p>be able to initiate appropriate invasive and non-invasive monitoring of patients</p> <p>be able to recognize the need for, and be able to initiate mechanical ventilation</p>
Arrhythmia	<p>understand the causes of common arrhythmias</p> <p>understand the indications, contraindications and side-effects of anti-dysrhythmics</p> <p>understand the indications for pacing</p>	<p>be able to differentiate between haemodynamically stable versus unstable rhythms</p> <p>be able to institute appropriate emergency treatment including valsalva manoeuvre, cardioversion, defibrillation and external pacing</p>
Syncope	<p>understand the common causes of syncope</p> <p>understand the common seizure types in children</p>	<p>be able to formulate a differential diagnosis</p> <p>be able to recognise pseudoseizures</p> <p>be able to recognise those patients who need immediate treatment, investigations and admission and those who can be managed as outpatients</p>
Endocarditis, myocarditis, pericarditis	<p>understand the causes of endocarditis, myocarditis and pericarditis</p>	<p>be able to recognize the signs and symptoms and be able to formulate a differential diagnosis and treatment plan</p> <p>be able to resuscitate and stabilize patients with life-threatening complications</p> <p>be able to order appropriate investigations available in the emergency department setting and to interpret the results appropriately</p>

Child and Adolescent Mental Health

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- understand normal behaviour patterns including response to injury and illness from birth to adolescence
- understand about attachment and conduct disorders
- be able to recognise abnormal child behaviour patterns
- understand the influence of physical, emotional and social factors on development and health
- understand about excessive crying and resources available to help families
- understand about the roles of other professions, agencies and the voluntary sector
- understand the behaviour aspects of eating disorders
- be able to recognise, support and manage patients presenting with self-harm
- understand about the multi-disciplinary nature of child and adolescent mental health services
- understand the signs and symptoms that indicate serious conditions such as depression and psychosis

Child protection and children in special circumstances

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- be familiar with local facilities for adolescents requiring advice including drug and alcohol misuse
- know what to do if a child discloses allegations of abuse
- know where help with management can be obtained and understand the pathways to ensure follow-up
- be able to appear as a professional witness in civil or criminal proceedings
- be able to present a medical report to a case conference and be able to contribute to that conference

The patient presents with:	Knowledge and understanding	Skills
Physical abuse	<p>understand the unusually subtle signs of physical abuse</p> <p>understand the signs of common injury or illness that may mimic physical abuse</p> <p>understand the common fractures seen in physical abuse</p>	<p>be able to recognise patterns of injury or illness which might suggest child abuse</p> <p>be able to initiate child protection procedures as per local policy</p>
Sexual abuse	<p>understand the ways in which children might reveal sexual abuse</p> <p>understand and recognise the signs and symptoms of sexual abuse in children</p> <p>understand the relationship between sexually transmitted infections and sexual abuse in children</p> <p>understand the importance of seeking help from experienced colleagues in the assessment of children where child abuse might be an issue</p>	<p>be able to institute appropriate child protection procedures if sexual abuse suspected</p>
Self-harm	<p>recognise this as an expression of distress, acute or long-term</p> <p>recognise repeated self-harm as indicating serious emotional distress</p>	<p>be able to refer to the CAMHS (Child & Adolescent Mental Health Services) team</p>
Neglect	<p>understand the ways in which children may present with neglect</p>	<p>be able to refer appropriately</p>
Apnoeic episodes as an infant	<p>be aware of this as a possible presentation of imposed airway obstruction and know the indicators that this may be the case</p> <p>understand the life- threatening nature of imposed airway obstruction</p>	<p>refer to an experienced colleague for help</p>

Dermatology

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage children presenting to the Emergency Department with dermatological disorders
- understand and recognise the possible dermatological manifestations and complications of other system disorders
- understand when referral for specialist dermatological opinion is appropriate
- understand the principles of therapy for skin complaints

The patient presents with:	Knowledge and understanding	Skills
Life-threatening dermatological emergencies i.e. toxic epidermal necrolysis, erythroderma, Stevens-Johnson Syndrome, Staphylococcal scalded skin syndrome	understand the features of management of life-threatening emergencies	be able to assess and start treatment promptly be able to recognise when to obtain other specialist opinions e.g. from dermatology or ophthalmology
Eczema and seborrheic dermatitis	understand the common treatments for eczema and reasons for treatment failure	be able to manage eczema and seborrheic dermatitis be able to advise patients and families about disease process and treatment
Bites and infestations	understand the aetiology by age and the pathophysiology of bites and infestations understand and recognise the signs and symptoms of bites and infestations	be able to manage children with acute bites and infestations, including recognition of signs and symptoms of life- and limb-threatening complications

Endocrinology and Metabolic Medicine

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the understanding and skills to be able to assess and manage children presenting to the Emergency Department with endocrine or metabolic disorders including inborn errors of metabolism
- understand and recognize the possible metabolic and endocrine complications of other system disorders
- be able to select and interpret appropriate endocrine and metabolic investigations
- understand when and how to perform endocrine and metabolic investigations in neonates and children presenting to the Emergency Department
- understand about the biochemical findings in children presenting with metabolic disease
- recognize and be able to manage clinical and biochemical features of electrolyte and acid base abnormalities

The patient presents	Knowledge and understanding	Skills
Diabetic ketoacidosis	<p>understand the pathophysiology of ketoacidosis</p> <p>understand local and national guidelines for the management of diabetic ketoacidosis, including the principles of fluid management and insulin therapies</p>	<p>be able to formulate a likely diagnosis and recognise features of the presentation and complications</p> <p>be able to recognise features of cerebral oedema and be able to provide emergency treatment</p> <p>be able to perform appropriate investigations and act on the results</p> <p>be able to prescribe fluid, electrolyte and insulin therapy</p> <p>be able to explain the condition to patients and caregivers</p>
Hypoglycaemia	<p>understand the causes, presentations, complications, investigations and emergency treatment in the neonatal period and beyond</p>	<p>be able to perform appropriate investigations</p> <p>be able to treat appropriately</p>

The patient presents	Knowledge and understanding	Skills
Adrenal insufficiency	understand the hypothalamic / pituitary/adrenal axis	be able to initiate appropriate investigations and treatment be able to recognize the features and select appropriate investigations and management for adrenal insufficiency be aware of and able to treat life-threatening complications including electrolyte disturbances
Acid-base and electrolyte abnormalities	understand the aetiology and pathophysiology of dehydration understand the presentation of dehydration understand the presentation, investigation and treatment of electrolyte disturbances	be able to recognize the life-threatening complications of dehydration be able to perform and interpret blood gas results be able to calculate and interpret anion and osmolar gaps be able to calculate and prescribe fluid replacement, maintenance fluids and replacement for ongoing losses

Gastroenterology

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the understanding and skills to be able to assess and manage children presenting to the Emergency Department with gastrointestinal disorders
- understand and recognize the possible gastrointestinal complications of other system disorders
- be able to select and interpret appropriate investigations as well as understand the role of interventional procedures like endoscopies in the investigation of acutely unwell patients
- understand when to refer for specialist gastroenterological opinion
- be able to provide appropriate monitoring including measurement of central venous pressure if required

The patient presents with:	Knowledge and understanding	Skills
Acute abdominal pain	understand and be able to recognize the causes of acute abdominal pain in all age-groups	<p>be able to recognize conditions requiring stabilization and urgent intervention, including fluid resuscitation and pain control</p> <p>be able to recognize atypical presentations of common conditions</p> <p>be able to interpret plain x- rays</p> <p>recognise the signs of pain in an infant or small child</p> <p>recognise when a surgical opinion is required</p>
Acute vomiting with or without diarrhoea	<p>understand and be able to recognize the causes of acute vomiting and diarrhoea</p> <p>understand about the scientific principles of oral and intravenous fluid replacement</p>	<p>be able to recognize and order appropriate treatment for the seriously ill patient</p> <p>be able to recognize and manage dehydration safely</p>
Upper and lower gastro-intestinal bleeding	<p>understand the causes of upper and lower GI bleeding</p> <p>understand about and be able to recognise life-threatening causes, including intussusception</p>	<p>be able to stabilize the hemodynamically compromised patient including use of intraosseous insertion and central access</p> <p>be able to identify the need for investigations including endoscopy, blood transfusion and surgical referral appropriately</p>
Acute liver failure	<p>understand the causes of acute liver failure</p> <p>understand the management of paracetamol overdose</p>	<p>be able to assess the severity and complications of this condition</p> <p>be able to initiate appropriate resuscitation and liaise early with a liver unit</p>
Recurrent abdominal pain	<p>understand the possible biological, psychological and social contributing factors in recurrent abdominal pain</p> <p>understand which features suggest that reassurance rather than investigation is needed</p>	<p>recognize features in the presentation that suggest the importance of different aetiologies</p> <p>ensure appropriate outpatient follow-up</p>

The patient presents with:	Knowledge and understanding	Skills
Constipation	understand and be able to recognize predisposing conditions as well as psychological and dietary factors involved	be able to initiate management based on national guidelines be able to arrange appropriate follow-up for the patient and identify patients requiring specialist input be able to communicate dietary and psychological strategies as well as the role of medication in treatment

Gynaecology and Obstetrics

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage children and adolescents presenting with gynaecological disorders to the Emergency Department
- be able to select and interpret appropriate gynaecological investigations including microbiology and virology results, beta Human Chorionic Gonadotrophin and ultrasonography
- understand when referral for specialist paediatric gynaecology assessment is appropriate
- understand when referral to the child protection team is appropriate
- understand the forensic aspects of child sexual abuse and male/female rape as pertinent to emergency care
- have the knowledge and skills to be able to assess and manage transfer of patients in labour if appropriate and be aware of the life-threatening complications of pregnancy and necessary emergency interventions
- be able to assist with a precipitous delivery

The patient presents with:	Knowledge and understanding	Skills
Ectopic pregnancy	<p>understand the pathophysiology of ectopic pregnancy</p> <p>understand and recognise the signs and symptoms as well as complications of ectopic pregnancy</p> <p>recognise the value of and be able to interpret the findings of ancillary studies in patients with ectopic pregnancies</p>	<p>be able to recognise shock and peritonitis in the young female</p> <p>be able to manage life-threatening complications of ectopic pregnancy including venous access and management of hemorrhagic shock</p>
Sexually transmitted infections	<p>understand and recognise the signs and symptoms of common sexually transmitted infections</p> <p>understand the appropriate antimicrobial therapy</p>	<p>be able to undertake a pelvic exam</p> <p>be able to use a speculum and take appropriate swabs for diagnosis and organize referral to an appropriate GU facility</p>

Haematology and Oncology

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage children presenting to the Emergency Department with haematological and oncological disorders
- understand and recognize the possible haematological and oncological complications of other system disorders
- understand the normal age-dependent haematological blood values
- understand the indications, contraindications and complications of the use of blood products
- understand the legal process if faced with parental objection to the use of blood products
- understand when referral for specialist paediatric haematological or oncological assessment is appropriate

The patient presents with:	Knowledge and understanding	Skills
Sickle cell crisis	understand the common presentations and complications of sickle cell crisis	be able to provide emergency management as well as appropriate pain control and fluid balance

<p>Anaemia</p>	<p>understand the causes of anaemia</p> <p>understand the presentation and treatment of severe anaemia</p>	<p>be able to interpret haematologic investigations and recognise serious underlying pathology</p> <p>be able to manage iron deficiency anaemia</p>
<p>Purpura and bruising</p>	<p>understand the causes of purpura</p>	<p>be able to recognise features in the presentation which suggest serious pathology including meningococemia and leukemia</p> <p>be able to manage life-threatening causes of purpura</p> <p>be able to diagnose, organise follow-up and explain Henoch-Schonlein purpura and idiopathic thrombocytopaenia purpura to patients and caregivers</p> <p>be able to recognize patterns suggestive of child abuse and organise care</p> <p>be able to manage bleeding disorders in trauma i.e. haemophilia and Von Willebrands</p>
<p>Leukaemia/ lymphoma</p>	<p>understand the presentation and emergency treatment of acute complications</p>	<p>be able to recognize and diagnose in the emergency room setting</p>
<p>Immuno-compromised patient</p>	<p>understand the life-threatening complications and treatment</p> <p>understand the common sites of infection and organisms causing sepsis in this group of patients</p> <p>understand the rationale behind specific antimicrobial regimes</p>	<p>be able to follow local guidelines for the management of the febrile neutropenic patient</p>

Infection, Immunology and Allergy

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage children presenting to the Emergency Department presenting with infectious diseases and allergic conditions
- understand and recognize the possible infectious complications of other system disorders
- be able to select and interpret appropriate laboratory investigations, including microbiology and virology cultures, and understand the significance of results pertaining to all age-groups
- understand when referral for specialist infectious disease or allergy assessment is appropriate
- understand the causes of vulnerability to infection
- understand the epidemiology, pathology and ‘natural history’ of common infections of the newborn and children in Britain and the public health policies associated with them
- be able to follow agreed national and local guidelines on the notification of infectious diseases
- understand the rationale for prescribing common antimicrobials
- understand the indications for antimicrobial prophylaxis
- understand the pathophysiology and principles of treatment of allergic and autoimmune disorders

The patient presents with:	Knowledge and understanding	Skills
Septic shock	<p>understand the definition of sepsis and be able to distinguish between compensated and uncompensated shock</p> <p>understand the pathophysiology of sepsis causing shock</p> <p>understand the life-threatening complications of sepsis</p> <p>understand the nationally agreed guidelines for the management of septic shock</p>	<p>be able to initiate and lead management of early and advanced features of septic shock</p> <p>be able to recognise and treat rapidly life-threatening complications</p> <p>be able to initiate vasoactive drug therapy and be aware of their complications and side effects</p>
Febrile child	understand the implication of fever without a focus in different age groups	be able to appropriately investigate and treat children with fever without a focus in all age groups
Common childhood exanthems	understand about the clinical manifestations, aetiology, epidemiology, isolation, immunization schedule, control measures and care of exposed people	<p>be able to notify Public Health</p> <p>be able to advise about risk to mother, neonate and need for prophylaxis</p>

Needle-stick injury	understand the local guidelines for management of needle-stick injury	<p>be able to identify patients requiring Emergency Department prophylaxis</p> <p>be able to recognise the importance of universal precautions as well as the disposal of sharps within the department</p>
Anaphylaxis	understand the management of anaphylaxis in the Emergency Department setting	<p>be able to manage life-threatening complications</p> <p>be able to provide immediate advice on allergen avoidance and future emergency management</p>
Kawasaki disease	understand and recognise the signs of Kawasaki disease	<p>be able to recognise and manage life-threatening complications of Kawasaki disease</p> <p>be able to initiate a management plan</p>

Neonatology

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage neonates presenting to the Emergency Department
- understand the pathophysiological processes leading to neonatal cardio-pulmonary instability, including the role of thermoregulation
- understand and recognise the signs and symptoms of neonatal distress
- be able to perform a reliable assessment of fluid status and adjust fluid management as needed
- be able to identify neonates requiring admission, requiring a midwife or health visitor input and identify mothers requiring additional support

The patient presents with:	Knowledge and understanding	Skills
Cyanotic/non cyanotic congenital heart disease	understand the anatomy and presentation of congenital heart disease	<p>be able to make a likely diagnosis and investigate and manage appropriately</p> <p>be able to initiate antiprostaglandin therapy as required and recognise the need for ventilatory support</p> <p>be able to identify those neonates requiring urgent specialist opinion</p>

Jaundice	understand the investigations that differentiate between conjugated and unconjugated hyperbilirubinemia	be able to diagnose and manage jaundice be able to identify which neonates require specialist input and arrange follow up in an appropriate timeframe
Sepsis	understand the importance of timely treatment and the range of treatments for likely pathogens understand the appropriate treatment for a septic neonate	be able to perform and interpret appropriate investigations

Nephro-urology

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage children presenting with Nephro-urology problems to the Emergency department.
- have the knowledge and understanding of fluid and electrolyte imbalances and blood pressure in children with kidney problems
- be able to perform an accurate assessment and management of fluid status
- be able to select and interpret appropriate renal investigations including urine microbiology and renal function tests
- understand when referral for specialist paediatric nephrology, general surgical or urological assessment is appropriate

The patient presents with:	Knowledge and understanding	Skills
Urinary tract infection	understand the presentation, aetiology and management of urinary tract infections in the acute setting at different age groups understand the range and accuracy of different methods of urine collection understand the appropriate imaging, based on age and local guidelines, of patients post-urinary tract infection	be able to interpret common urine microscopic and culture findings and initiate appropriate treatment

Hypertension	<p>understand the techniques for blood pressure measurement</p> <p>understand the causes of hypertension and the principles of treatment</p>	<p>be able to interpret blood pressure measurement based on the age of the patient</p> <p>be able to initiate emergency management of hypertension</p>
Acute scrotal pain	<p>understand the differential diagnosis, investigations and management</p>	<p>be able to recognise the causes of acute scrotal pain</p> <p>be able to identify children requiring urgent surgical referral</p>

Neurology

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage children presenting to the Emergency department with neurological disorders
- be able to perform a developmental assessment appropriate to the Emergency department setting
- understand and recognize the possible neurological complications of other system disorders
- be able to select and interpret appropriate neurological investigations with major abnormalities including EEG and head CT scans
- understand when referral for specialist neurological opinion is appropriate

The patient presents with:	Knowledge and understanding	Skills
Coma	<p>understands the need for airway protection</p> <p>understands the differential diagnosis, and appropriate sequence of investigations and treatment</p>	<p>be able to ensure a patent airway in the unconscious patient</p> <p>be able to use a validated coma scale correctly e.g. Glasgow Coma Score (GCS)</p>
Meningitis/ Encephalitis	<p>understand the bacterial and viral aetiologies for all age groups and the appropriate antimicrobial/antiviral treatment</p> <p>understand the recommendations for prophylaxis for household contacts and the process and method of Public Health notification</p> <p>understand the contraindications and complications of a lumbar puncture</p>	<p>be able to recognize and institute treatment for life-threatening complications, including raised intracranial pressure</p> <p>be able to perform and interpret results of a lumbar puncture on all age-groups as appropriate</p>

Seizures including status epilepticus	<p>understand the common causes of seizures in babies and children and their complications</p> <p>understand local and national guidelines for the treatment of status epilepticus</p> <p>be familiar with the side-effects and complications of anticonvulsants and their management</p>	<p>be able to recognize and treat the life-threatening complications</p> <p>be able to institute appropriate management including RSI for prolonged, intractable seizures</p>
Headache	<p>understand how to distinguish between the causes</p> <p>understand current local guidelines for treatment of migraine</p>	<p>be able to initiate and interpret appropriate investigations and treatment</p> <p>be able to advise families on triggers of migraine and management of acute attacks</p>

Neurosurgery

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage children presenting with neurosurgical conditions to the Emergency Department
- understand the life-threatening nature of these conditions
- be able to select and interpret appropriate neurosurgical investigations including CT scans, MRI and lumbar puncture
- understand when referral for specialist paediatric neurosurgical assessment is appropriate

The patient presents with:	Knowledge and understanding	Skills
Blocked shunt	understand the presentation, complications and management of children with blocked shunts	be able to tap a blocked shunt in a child with signs of impending herniation

Ophthalmology

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage children presenting with ophthalmological problems to the Emergency Department
- be able to select and interpret appropriate ophthalmological investigations including Snellen charts and visual field examinations
- understand when referral for specialist paediatric ophthalmological assessment is appropriate

The patient presents with:	Knowledge and understanding	Skills
Bell's palsy	understand the differential diagnosis of possible underlying disorders	be able to identify those needing only out-patient follow-up and give simple advice to child and parents recognise cases requiring further investigation
The patient presents with:	Knowledge and understanding	Skills
Conjunctivitis	understand the differential diagnosis of red eye	be able to identify those patients requiring treatment
Chemical eye injury	understand the importance of timely treatment where appropriate	be able to institute eye irrigation be able to refer for further treatment as appropriate

Orthopaedics

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- understand the likely types of soft tissue and bony injuries for each age group
- be able to judge if these relate correctly to the stated mechanism of injury
- be aware of rheumatological, infectious, malignant and non-accidental causes of musculoskeletal presentations
- be able to examine a child in a way which localises the injury
- be able to manage and score pain appropriately
- be able to request and interpret x-rays appropriately

- understand the Salter-Harris classification of epiphyseal injuries
- be able to splint or apply plaster of Paris appropriately to limbs
- understand when referral to physiotherapy would be of benefit
- understand the likely time-frame for recovery in children
- be able to arrange appropriate follow-up at a sensible time

The patient presents with injury to:	Knowledge and understanding	Skills
Shoulder region	<p>know the presentation and management of the range of traumatic injuries of the shoulder</p> <p>know about the presentation and management of septic arthritis of the shoulder</p>	<p>be able to examine the shoulder region, identify injuries and any associated neurovascular problems</p> <p>be able to reduce a dislocated shoulder safely and treat the other conditions appropriately</p> <p>recognise the possibility of child abuse in the case of spiral fracture of the humerus and instigate Child Protection procedures if appropriate</p>
The patient presents with injury to:	Knowledge and understanding	Skills
Elbow	<p>know the presentations of the range of fractures around the elbow and their management</p> <p>understand the fracture-dislocations (Monteggia and Galeazzi)</p>	<p>be able to identify an effusion correctly and any neurovascular problems</p> <p>be able to reduce a pulled elbow and treat the other conditions appropriately</p> <p>recognise the fracture patterns which require urgent orthopaedic referral</p>
Wrist	<p>understand about distal radius and scaphoid fractures</p>	<p>understand when to refer displaced fractures for reduction</p>
Hand injuries	<p>know the presentation and management of fractures of the bones of the hand</p>	<p>have developed a technique for assessing the neurovascular function and tendon function of the hand in verbal and pre-verbal children</p>

<p>Pelvis, hip and thigh</p>	<p>know about the mechanism, identification and treatment of the fractured pelvis – stable and unstable</p> <p>understand the differential diagnoses of limp and knee and hip pain as well as concept of referred pain</p> <p>know about avulsion fractures around the hip</p> <p>know about the mechanisms of development of a fractured femur</p> <p>understand the appropriate imaging for each of the pathologies</p>	<p>be able to examine gait, stature and the hip joint in all age-groups</p> <p>be aware of which blood tests are appropriate and when to perform them</p> <p>be able to perform a femoral nerve block and splintage of femoral shaft fractures</p>
<p>Knee and lower leg</p>	<p>know the presentation and management of the causes of knee pain including fractures, dislocations and osteochondritis.</p> <p>understand the significance of haemarthrosis</p>	<p>be able to detect an effusion, examine the quadriceps mechanism and detect a locked knee</p> <p>be able to detect the subtle signs of a toddler’s fracture and use the radiographs appropriately</p>
<p>The patient presents with injury to:</p>	<p>Knowledge and understanding</p>	<p>Skills</p>
<p>Knee and lower leg</p>	<p>understand the mechanism, risk, early recognition, prevention, and consequences of compartment syndrome</p>	<p>use plain radiography (including the Ottawa Knee Rules) appropriately</p> <p>be able to reduce a patella dislocation</p> <p>be able to identify compartment syndrome</p>
<p>Ankle</p>	<p>understand common epiphyseal injuries</p> <p>understand the commonly injured ligaments</p> <p>understand common epiphyseal injuries</p> <p>understand the commonly injured ligaments</p>	<p>assess the ankle joint and identify patients who need plain radiography (Ottawa Ankle Rules)</p> <p>be able to recognise those ankle fractures that require operative intervention</p> <p>be able to examine and assess the ankle joint and identify patients who need plain radiography (Ottawa Ankle Rules)</p> <p>be able to recognise those ankle fractures that require operative intervention</p>

Foot	understand the presentation and management of talar, calcaneal, metatarsal and phalangeal fractures	be able to recognise those patients who need radiography (Ottawa foot rules)
Spine	<p>understand the mechanisms and risk of spinal injury in children</p> <p>know the myotomes and dermatomes</p> <p>be aware of SCIWORA</p> <p>understand the differential diagnosis of non-traumatic back pain in children</p>	<p>be able to immobilise the spine and log roll a patient</p> <p>be able to manage the anxious immobilised child</p> <p>be able to examine the spine and the indications for being able to clinically ‘clear’ the spine</p> <p>understand the indications for radiology and be able to interpret common abnormalities paediatric spinal radiographs</p>

Plastic surgery

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the knowledge and skills to be able to assess and manage children presenting injuries requiring plastic surgery to the Emergency department
- have a detailed knowledge of the anatomy of the hand, wrist and face
- understand the limb-threatening nature of some of these injuries
- understand when referral for specialist plastic surgical assessment is appropriate
- be able to use local anaesthesia appropriately and safely, understanding the anatomy of nerve blocks and the dosages and complications of local anaesthetic agents
- be able to assess a wound and underlying structures
- be able to explore, clean and debride wounds as appropriate
- understand and be proficient with various skin closure techniques including those for lip lacerations and select and apply appropriate wound dressings and splints
- understand and initiate appropriate tetanus prophylaxis

Poisoning and accidents

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- understand the epidemiology of poisoning and be able to identify the major types of ingestions by age

- be able to prioritise critical assessment and management interventions
- understand and recognise the specific signs and symptoms of poisoning with a range of toxic agents
- understand the appropriate sequence of investigations in the poisoned child
- understand the role of antidotes in specific ingestions
- understand the role of activated charcoal and other modalities to prevent absorption and methods to enhance elimination in the treatment of the poisoned child
- understand various methods of access to information about poisons
- understand the pharmacology and the treatment of common poisonings
- understand how to manage the adolescent refusing treatment for a life-threatening overdose
- be aware of overdose as a self-harm presentation
- know that repeated ingestions may be a presentation of neglect
- have the knowledge and skills to be able to assess and manage patients presenting with near-drowning and drowning.
- understand the key signs of potential life-threatening injury associated with near-drowning and the sequence of appearance of these signs
- be able to identify the major types of significant electrical injuries
- be able to recognise the signs and symptoms of potential life-threatening electrical injuries
- understand the signs, symptoms and management of life-threatening hyper and hypothermia in children

The patient presents with:	Knowledge and understanding	Skills
Burns	<p>understand how to differentiate the depth as well as the percentage of burn</p> <p>understand the appropriate management depending on the age of the child and the severity of the burn</p>	<p>be able to recognise upper airway risks from heat and lower airway risks from inhalation injury and manage the patient accordingly</p> <p>be able to assess accurately the area and depth of the burn</p> <p>be able to recognise the importance of burns in specific areas eg. face</p> <p>be able to calculate resuscitation and ongoing fluid requirements</p> <p>be able to identify patients requiring referral to a specialist centre</p> <p>be able to manage minor burns and arrange appropriate follow-up</p> <p>be able to recognise possible patterns of child abuse in burn injuries</p>

Drowning	<p>understand and recognise the differences in the probable aetiology of drowning and associated problems by age group</p> <p>understand the physiology of drowning</p> <p>understand the key signs of potential life-threatening injuries associated with near-drowning episodes</p>	<p>be able to manage life-threatening injuries and complications</p> <p>be able to ensure temperature measurement, thermal regulation and temperature control</p> <p>be able to initiate appropriate re-warming techniques in the hypothermic patient</p>
The patient presents with:	Knowledge and understanding	Skills
Major incident cascade	<p>understand the safety aspects of chemical/biological/radionuclear incidents (CBRN)</p> <p>understand local and national guidelines on Major Incident planning</p> <p>have the knowledge and understanding to act as the Emergency Department team leader during an incident</p>	<p>be able to safely use and oversee other staff members in their safe use of decontamination equipment</p> <p>be able to triage mass casualties</p> <p>be able to co-ordinate an Emergency Department response</p> <p>be able to debrief staff following an incident</p>

Respiratory medicine, with Ear, Nose and Throat

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- have the understanding and skills to be able to assess and manage children presenting with respiratory disorders or ENT problems to the Emergency Department
- understand and recognize the possible respiratory complications of other system disorders
- be able to select and interpret appropriate respiratory investigations including arterial blood gases, chest x- rays and peak flow measurements
- understand when referral for specialist paediatric respiratory assessment is appropriate

The patient presents with:	Knowledge and understanding	Skills
Asthma	<p>understand and be able to apply the British Thoracic Society asthma guidelines for the management of asthma</p> <p>understand the pharmacological therapies available and their indications and complications</p> <p>understand the indications and complications of drugs used in intubating severely asthmatic patients</p>	<p>be able to recognize patients with life-threatening asthma who may require ventilation</p> <p>be able to provide bag valve mask ventilation and intubation in life-threatening asthma</p>
Acute stridor	understand the infective, allergic and obstructive causes of this condition	be able to institute appropriate acute airways management
The patient presents with:	Knowledge and understanding	Skills
Pneumothorax	understand the diseases or circumstances predisposing to pneumothorax	<p>be able to recognize pneumothorax</p> <p>be able to perform needle thoracocentesis and chest drain insertion in life-threatening situations, recognizing possible complications</p> <p>be able to transport a patient safely with a chest drain in situ</p>
Bronchiolitis	understand the epidemiology and common presentations of bronchiolitis	<p>be able to prioritise and interpret investigations and treatment</p> <p>be able to formulate a differential diagnosis</p> <p>be able to recognize other conditions with similar presentations including cardiac causes</p> <p>be able to initiate appropriate respiratory support including nasal/facial continuous positive airway pressure (CPAP) ventilation</p>

Pneumonia	<p>understand the principles of management of community-acquired pneumonia according to local antimicrobial resistance</p>	<p>be able to recognize the patient requiring admission and possible mechanical support</p> <p>be able to provide supplemental oxygen therapy as required including mechanical ventilation</p> <p>be able to provide monitoring including arterial lines as appropriate</p>
Pertussis	<p>understand the age-dependent presentations and indications for admission</p> <p>understand the environmental implications</p> <p>understand the appropriateness of antibiotic therapy depending on the stage of presentation</p>	<p>be able to initiate appropriate treatment of patient and contacts</p> <p>be able to identify those at risk of life-threatening complications</p>
Pertussis	<p>understand and follow the procedures for the notification to the Public Health Department</p>	
Earache or discharge	<p>understand the presentation of otitis media and glue ear and their association with hearing loss in children</p>	<p>be able to perform otoscopy correctly</p> <p>be able to identify otitis external and otitis media and treat them appropriately</p> <p>recognise that language delay or attention deficit requires onward referral</p>
Traumatic ear conditions	<p>be aware of the possibility of abuse in cases of ear trauma</p>	<p>be able to remove foreign bodies in the ear canal or pinna</p> <p>be able to recognise a haematoma requiring surgical drainage</p>
Epistaxis	<p>be aware of the most likely causes of epistaxis</p>	<p>be able to advise parents on first aid measures and identify correctly the need for immediate or out-patient referral</p>
Nasal trauma	<p>understand the clinical signs of a fractured nasal bone, and the appropriate timescale for referral</p>	<p>be able to identify and refer for a septal haematoma</p> <p>be able to remove nasal foreign bodies</p>

The patient presents with:	Knowledge and understanding	Skills
Acute throat infections	be aware of indications for tonsillectomy be aware of life-threatening airway obstruction in epiglottitis, and how to avoid it	be able to take an appropriate history to identify sleep apnoea be able to identify a quinsy on examination be able to manage a post-tonsillectomy bleed safely be able to manage or refer where appropriate foreign bodies in the throat
Airway obstruction	understand the technique of a providing a surgical airway under supervision (at least on a model) be familiar with emergency airway equipment (e.g. Magill's forceps)	be able to recognise all the signs of airway obstruction (choking, stridor, tracheal tug and sternal recession, dysphonia etc) be able to perform the basic and advanced life support manoeuvres for the choking child be able to call for help and manage safely the child with potential airway obstruction
Dental problems	understand the indications for urgent referral to a maxillofacial specialist as opposed to referral to a dental practitioner	be able to recognise a dental abscess be able to replace an avulsed permanent tooth

Trauma

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- understand the likely types of injury following a fall from a height and a road traffic accident
- understand and apply the principles of Acute Trauma Life Support/Advanced Paediatric Life Support
- be able to take on the role of trauma team leader and organise the composition of the team

- be familiar with commonly used equipment, e.g. cervical immobilisation, fluid warmer, body warmer, splintage
- be aware of the indications for intubation and able to perform the procedure recognizing potential complications
- be able to distinguish and manage the causes of shock in the trauma patient
- be able to achieve vascular access including intraosseous and central access
- understand blood product administration in management
- understand the indications for immediate surgical intervention including thoracotomy and laparotomy
- be able to “clear” the cervical spine as appropriate and, if not, be able to proceed with a logical sequence of investigations to help clear the cervical spine
- be able to examine a child in a way which localises injuries
- be able to manage pain appropriately by understanding the pharmacology, indications, contraindications and side-effects of commonly used agents as well as the use of pain scores in the Emergency Department
- be able to request and interpret laboratory investigations and x-rays appropriately
- be aware of child protection and accident prevention issues

The patient presents with:	Knowledge and understanding	Skills
Head injury	<p>understand the pathophysiology and optimal mechanisms of maintaining adequate cerebral perfusion</p> <p>understand the signs of basal skull fracture, depressed skull fracture, raised intracranial pressure</p> <p>understand the NICE guidelines for head injury</p> <p>understand when to involve neurosurgical colleagues</p> <p>understand when to safely discharge children with minor head injury</p> <p>understand how to recognize signs of physical abuse and how to proceed with local child protection protocols</p>	<p>be able to recognise when rapid sequence induction for intubation is indicated</p> <p>understand and be able to manage the side-effects and complications of the drugs used</p> <p>be able to interpret oximetry and end tidal Co2 analysis</p> <p>be able to assess AVPU and Glasgow Coma Score (GCS)</p> <p>be able to judge pupil response and size accurately</p> <p>be able to request appropriate radiology including plain skull x-rays and head CT scans as per local and national guidelines</p> <p>be able to initiate management of all children with scalp lacerations</p>

Abdominal injury	<p>understand the common types of injury and how to detect them clinically</p> <p>understand the indications for and limitations of ultrasound and CT scan in diagnosis</p>	<p>be able to identify correctly and manage shock when the patient is not responding to volume resuscitation, and recognise the need for urgent surgical opinion</p> <p>request the appropriate level of observation required</p>
Chest injury	<p>understand the likely chest injuries through different age groups</p> <p>understand the presentation and management of pulmonary contusion</p>	<p>be able to perform a thorough chest examination</p> <p>be able to detect and treat a tension and simple pneumothorax as well as haemothorax</p>
The patient presents with:	Knowledge and understanding	Skills
Chest injury	<p>understand the presentation and management of flail chest</p> <p>understand when surgical treatment is required</p> <p>understand the indications for plain x- rays, ultrasonography, CT scans echocardiography and angiography</p>	<p>be able to recognize and initiate management for great vessel trauma</p> <p>be able to anticipate need for and recognise when a thoracotomy is indicated and assemble surgical support</p> <p>be able to recognise and initiate management of tracheobronchial rupture</p> <p>be able to perform an emergency pericardiocentesis</p>
Fractured pelvis	<p>understand how pelvic fractures may be stable or unstable, understand the common fracture patterns, and the causes of hypovolaemia</p>	<p>be able to identify and manage an unstable pelvic fracture during primary survey and rapidly enlist senior orthopaedic assistance</p>
Crush, degloving injuries and amputation	<p>understand the pathophysiology of rhabdomyolysis and compartment syndrome</p>	<p>be able to identify compromised soft tissues requiring plastic surgical referral</p> <p>be able to identify signs of rhabdomyolysis and compartment syndrome</p> <p>be able to preserve an amputated body part correctly</p>

Major burns	<p>understand the pathophysiology of different types of burn – electrical, thermal, and chemical</p> <p>understand the difference between different depths of burn</p> <p>understand about dressings used</p>	<p>be able to recognise the child with a potentially compromised airway or inhalational injury</p> <p>be able to assess burn size and depth</p> <p>be able to identify correctly burns which need specialist referral</p> <p>be able to recognise toxic shock syndrome</p>
The patient presents with:	Knowledge and understanding	Skills
Spine	<p>understand the mechanisms and risk of spinal injury in children</p> <p>understand the anatomic myotomes and dermatomes</p> <p>be aware of SCIWORA</p> <p>understand the pathophysiology and signs of spinal shock and its treatment</p>	<p>be able to manage the anxious immobilised child</p> <p>be able to examine the spine and apply the indications for being able to clinically ‘clear’ the spine</p>

Section 5 Practical Procedures and Investigations

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- know the appropriate indications for practical procedures and investigations
- know the contraindications and complications of procedures
- know the local and national guidelines for obtaining informed consent
- know the local and national guidelines for undertaking investigations or procedures
- know the local guidelines for providing sedation and pain relief for practical procedures
- know the relevant anatomical markers for invasive procedures
- know and practise scrupulous aseptic techniques
- be aware of safety issues for patients and staff in relation to investigations of body fluids and radiation
- understand the importance of post-mortem investigations
- know the national and local guidance for obtaining consent for post-mortem
- be able to interpret results of investigations requested and respond appropriately
- be able to record results and document procedures legibly and accurately
- be able to give appropriate medical information when requesting investigations
- know that results should be requested clearly and retrieved promptly
- understand common age-appropriate normal ranges or appearances
- be able to use all equipment required to undertake common procedures and investigations
- be able to explain the investigation results to parents and/or the child
- be aware of the factors that are likely to influence the anxiety of the child, parent and doctor and know how to enlist effectively the help of play-leaders, nursing staff and more senior paediatric staff when necessary
- be receptive to feedback from patients and parents/carers on the effects of medication/treatment
- know about the role of complex investigations eg CT and MRI scans and their diagnostic potential and complications

- recognise when the results of commonly-used radiological investigations are abnormal
- have developed confidence in independent performance of practical procedures
- be able to supervise and teach others
- recognise complications of procedures and be able to respond appropriately
- understand and follow the local guidelines for the prevention and management of needle-stick injury
- be able to recognise the importance of universal precautions as well as the disposal of sharps within the department

- have experience of speaking to parents when complications have occurred
- know about processes for critical incident reporting
- obtain informed consent appropriately
- supervise handover of results that still need to be obtained at the end of shifts

Competences specific to the specialty

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- understand the appropriate relevant anatomical markers, indications, contraindications and complications of procedures commonly used in the Emergency Department
- understand local guidelines for providing sedation and pain relief in the Emergency Department
- understand age-appropriate normal ranges of tests commonly requested in the Emergency Department setting
- understand the positive and negative predictive value of commonly performed tests
- be able to enlist the help of play therapists and nursing staff in order to attempt to reduce the anxiety of a child and caregivers
- recognise the importance of the disposal of sharps and understand the local guidelines for management of needle-stick injury be able to identify with patients requiring prophylaxis

Diagnostic Procedures

By the end of Level 3 Training, trainees will be able to perform the following diagnostic procedures independently:

- collection of blood from central lines
- umbilical artery and venous cannulation and sampling
- peripheral arterial cannulation
- venesection
- capillary blood sampling
- suprapubic aspiration of urine
- urethral catheterisation
- routine testing of urine
- perform basic lung function tests
- electrocardiogram
- lumbar puncture
- non-invasive blood pressure measurement

Competences specific to the specialty

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform, interpret and teach the following diagnostic procedures:

- pulse oximetry
- capnography and end tidal Co2 recording
- measurement of peak flow
- non-invasive and invasive blood pressure and central venous pressure measurement
- collection of blood from central lines
- umbilical venous cannulation and sampling
- peripheral arterial cannulation
- venesection
- capillary blood sampling
- intraosseous line insertion
- saphenous vein cut down
- suprapubic aspiration of urine
- urethral catheterisation
- routine testing of urine
- electrocardiogram
- lumbar puncture
- visual acuity testing
- fluorescein instillation into eye

Therapeutic Procedures

By the end of Level 3 Training, trainees will be able to perform the following therapeutic procedures independently:

- administer intradermal, subcutaneous, intramuscular, intravenous injections
- percutaneous long-line insertion
- bag, valve and mask ventilation
- needle thoracocentesis for pleural effusion or pneumothorax
- tracheal intubation
- intubation of newborn infants of most gestations
- administration of surfactant
- external chest compression
- insertion of intraosseous needle

Competences specific to the specialty

Acute Life Support/Resuscitation procedures

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- manual airway clearance manoeuvres
- airway insertion
- Heimlich manoeuvre
- oxygen delivery techniques
- orotracheal and nasotracheal intubation including rapid sequence induction
- mechanical ventilation
- use of Continuous Positive Airways Pressure
- replacement of tracheostomy tube
- cricothyrotomy and percutaneous trans-tracheal ventilation
- needle thoracentesis
- tube thoracotomy
- intraosseus line insertion
- direct current electrical cardioversion defibrillation
- external cardiac pacing
- pericardiocentesis
- warming procedures
- skin decontamination

Dentistry

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- reimplantation of tooth
- splinting of tooth
- reduction of TMJ dislocation

ENT Procedures

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- control of epistaxis with cautery, anterior packing, posterior packing and balloon replacement
- cerumen removal
- incision and drainage of auricular haematoma
- aural wick insertion

Foreign Body Removal

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

Removal of a foreign body from the:

- nose
- ear
- soft tissue
- eye
- the removal of a ring

Gastrointestinal procedures

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- oro/nasogastric and gastrostomy tube replacement
- treatment of umbilical granuloma
- gastric lavage
- hernia reduction
- reduction of rectal prolapse

Genitourinary

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- paraphimosis reduction
- urethral catheterisation
- treatment of umbilical granuloma

Minor Surgical Procedures

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- infiltration of local anaesthetic
- incision and drainage of abscesses
- incision and drainage of paronychia
- evacuation of subungual haematoma
- wound exploration and irrigation
- wound repair with glue, adhesive strips and sutures
- fingernail/nailbed injuries
- emergency management of amputation
- fishhook removal
- hair tourniquet removal

Musculoskeletal Techniques

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- immobilisation techniques
- application of Broad Arm Sling
- application of Collar and Cuff
- application of Thomas Splint
- pelvic stabilisation techniques
- spinal immobilization/log rolling
- fracture/dislocation reduction techniques
- shoulder dislocation

- elbow dislocation
- phalangeal dislocation
- supracondylar fracture with limb-threatening vascular compromise
- patellar dislocation
- ankle reduction
- reduction of pulled elbow
- helmet removal
- control of exsanguinating external haemorrhage

Plaster techniques

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- backslabs
- splints
- POP

Neurological Procedures

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- lumbar puncture
- ventriculo peritoneal shunt tap (VP)

Obstetric and Gynaecological Procedures

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- normal delivery
- gynaecological speculum examination

Ophthalmic Procedures

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- conjunctival irrigation
- contact lens removal
- eversion of eyelids

Pain relief and sedation

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will be able to perform the following procedures:

- pain scoring
- non-pharmacologic measures
- pharmacologic approaches
- local anaesthetics
- regional nerve blocks
- procedural sedation techniques

Pharmacology and Therapeutics

By the end of Level 3 Training in Paediatric Emergency Medicine, trainees will:

- know and understand the pharmacological basis for treatments
- know the approved indications and justification for prescribing drugs in common paediatric problems
- know the pharmacokinetics and pharmacodynamics of commonly prescribed drugs
- be able to calculate drugs accurately according to specific dose for weight, or age/weight range or on a specific dose/surface area basis
- know the risks of prescribing in the child-bearing years, in pregnancy and in breast-feeding mothers
- know about the roles of the regulatory agencies involved in drug use, monitoring and licensing (for example the National Institute of Clinical Excellence, the Committee on Safety of Medicines, the Medicines and Healthcare products Regulatory Agency and Hospital Formulary Committees)

- be able to find out information necessary for safe prescribing through use of paediatric formularies and pharmacy liaison
 - know about drug interactions of commonly used drugs
 - know about procedures for obtaining consent in children and young people for the administration of drugs
 - be able to use the local and national guidelines for the relief of pain in children
 - know and follow local policies for intrathecal cytotoxic therapy
 - respond appropriately to errors of prescription or administration and be able to talk to parents about this
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- be able to prescribe safely and supervise prescription for the newborn, and for children of all ages
 - know about the licensing of medicines for paediatric patients and unlicensed and off-label use and the implications of extemporaneous products
 - know how to explain relevant potential adverse side-effects
 - be able to advise and supervise safe prescription of intravenous fluids to medical and surgical patients
 - be able to prescribe in a manner that enhances adherence and provide information and explanation that enhances concordance

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